ABSTRACT OF THE DISCLOSURE

Sound source separation, without permutation, using convolutional mixing independent component analysis based on a priori knowledge of the target sound source is disclosed. The target sound source can be a human speaker. The reconstruction filters used in the sound source separation take into account the a priori knowledge of the target sound source, such as an estimate the spectra of the target sound source. The filters may be generally constructed based on a speech recognition system. Matching the words of the dictionary of the speech recognition system to a reconstructed signal indicates whether proper separation has occurred. More specifically, the filters may be constructed based on a vector quantization codebook of vectors representing typical sound source patterns. Matching the vectors of the codebook to a reconstructed signal indicates whether proper separation has occurred. The vectors may be linear prediction vectors, among others.

I hereby certify that this is being deposited with the United States Postal Service "Express Mail Post Office to addressee" service under 37 CFR § 1.10 in an envelope addressed to The Assistant Commissioner for Patents, Washington, DC 20231, on Apr 25, 2001, by Michael Dryja, and having "express mail" mailing label no. EL045149832US.

Signature of Michael Dryja